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| SERIAL NUMBER | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. |
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07/770,742 10/02/91 CASKEY

C D-5050-(C)

EXAMINER

MARSCHEL, A

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FULBRIGHT & JAWORSKI  
1301 MCKINNEY, SUITE 5100  
HOUSTON, TX 77010-3095

ART UNIT PAPER NUMBER

1807

16

DATE MAILED: 03/10/92

This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

☒ This application has been examined ☒ Responsive to communication filed on 10-2-91 ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), 0 days from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

**Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:**

- |   |  |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited by Examiner, PTO-892.        | 2. <input type="checkbox"/> Notice re Patent Drawing, PTO-948.                   |
| 3. <input type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449.             | 4. <input type="checkbox"/> Notice of Informal Patent Application, Form PTO-152. |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474. | 6. <input type="checkbox"/>  |

**Part II SUMMARY OF ACTION**

1. ☒ Claims 1-17 are pending in the application.  
Of the above, claims 9-17 are withdrawn from consideration.
2. ☐ Claims have been cancelled.
3. ☐ Claims are allowed.
4. ☒ Claims 1-8 are rejected.
5. ☐ Claims are objected to.
6. ☒ Claims 1-17 are subject to restriction or election requirement.
7. ☒ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on \_\_\_\_\_ . Under 37 C.F.R. 1.84 these drawings are ☐ acceptable. ☐ not acceptable (see explanation or Notice re Patent Drawing, PTO-948).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on \_\_\_\_\_ has (have) been ☐ approved by the examiner. ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed on \_\_\_\_\_, has been ☐ approved. ☐ disapproved (see explanation).
12. ☐ Acknowledgment is made of the claim for priority under U.S.C. 119. The certified copy has ☐ been received ☐ not been received  
☐ been filed in parent application, serial no. \_\_\_\_\_; filed on \_\_\_\_\_
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

EXAMINER'S ACTION

The Group and/or Art Unit location of your application in the PTO has changed. To aid in correlating any papers for this application, all further correspondence regarding this application should be directed to Group 180, Art Unit 1807.

If applicant desires priority under 35 U.S.C. § 120 based upon a parent application, specific reference to the parent application must be made in the instant application. It is noted that this appears as the first sentence of the specification following the title. Status of the parent application (whether patented or abandoned) should also be included. If a parent application has become a patent, the expression "Patent No." should follow the filing date of the parent application. If a parent application has become abandoned, the expression "abandoned" should follow the filing date of the parent application.

Restriction to one of the following inventions is required under 35 U.S.C. § 121:

I. Claims 1-8, drawn to methods of detection using PCR amplification, classified in Class 435, subclass 6.

II. Claims 9-17, drawn to DNA sequences for the gene coding for dystrophin, classified in Class 536, subclass 27.

The inventions are distinct, each from the other because of the following reasons:

Inventions of Group II and Group I are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (M.P.E.P. § 806.05(h)). In the instant case, the product as claimed can be used in a materially different process such as a

substrate in sequencing reactions to determine the sequence of the surrounding gene region of said product.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

During a telephone conversation with Thomas Paul on 1/4/90 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-8, in the parent application 07/256,689, of which the instant application is a continuation. Thus, the election is applied to the instant application also. Claims 9-17 are withdrawn from further consideration by the Examiner, 37 C.F.R. § 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 C.F.R. § 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a diligently-filed petition under 37 C.F.R. § 1.48(b) and by the fee required under 37 C.F.R. § 1.17(h).

Applicant's amendment filed 9/11/91 has been entered in the instant application. Applicants' amendment and arguments, filed 9/11/91, have been fully considered and they are not deemed to be persuasive to overcome the rejections applied in the previous

office action mailed 7/16/91. Rejections and/or objections not reiterated from previous office actions are hereby withdrawn. The following rejections and/or objections are either newly applied or reiterated. They constitute the complete set presently being applied to the instant application.

The following is a quotation of the first paragraph of 35 U.S.C. § 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification is objected to under 35 U.S.C. § 112, first paragraph, as the specification, as originally filed, does not provide support for the invention as is now claimed.

The amendment to the claims has introduced new matter into the claims. The first element of new matter is the limitation that all primers have similar melt characteristics given in claim 1, lines 8-9. There is no guidance anywhere in the specification that the primers have similar melt characteristics including on pages 16-17 suggested by applicants in the 9/11/91 amendment on page 2. Applicants state additionally that someone of ordinary skill in the art would recognize the importance of similar melt characteristics for the primers. This recognition is not clearly evident especially since so many parameters are varied in the practice of the amplification, such as temperature, enzyme amount, etc. This complex of parameters obscures and prevents

the additional recognition that melt characteristics should be similar for the primers used in the invention. Applicants are advised to either cancel the new matter by amendment or clearly point to where there is an instant disclosure that guides someone of ordinary skill to the conclusion that the primers have similar melt characteristics as claimed.

In claim 1, lines 16-19, there are listed several parameters directed to obtaining effective extension of all the primers. These limitations are broader in scope than the original disclosure since they cite general increases whereas the specification as originally filed only gives specific values for certain primer multiplex amplifications. This is new matter since general increases are broader than specific increases and there is also no guidance how to practice such general increases. Only the specific increases are originally disclosed. For example, one of the increases is for polymerase to be 100 units per microliter. No other increase is instantly disclosed nor guidance for how to gauge how to practice other enzyme amounts in other multiplex amplifications. What enzyme amount is to be used for 5 primer pairs, 10 primer pairs, etc? This same new matter rejection applies to the other increases such as extension times and combinations of extension times and increased enzyme. Applicants are advised that they must either cancel the new matter by amendment or point to antecedent basis in the originally filed specification.

Claims 1-8 are rejected under 35 U.S.C. § 112, first

paragraph, for the reasons set forth in the objection to the specification.

The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. § 103, the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 C.F.R. § 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of potential 35 U.S.C. § 102(f) or (g) prior art under 35 U.S.C. § 103.

Claims 1-8 are rejected under 35 U.S.C. § 103 as being unpatentable over Kogan et al.

This rejection is reapplied as given in the office action mailed 1/29/90 for the following reasons which are copied from the office action mailed 7/16/91:

The affidavit filed on 7/31/90 under 37 C.F.R. § 1.131 has

been considered but is ineffective to overcome the Kogan et al. reference. Affidavits filed to swear back of a reference under 37 C.F.R. § 1.131 must be signed by all inventors. The signing of this document by only Jeffrey S. Chamberlain, Ph.D. is therefore insufficient. See MPEP 715.04.

Additionally applicants argue the Kogan et al. reference based on a multiple bands shown in Figure 1 of Kogan et al. as showing spurious results. The Examiner wishes to point out that applicants acknowledge that Kogan et al. is amplifying repetitive sequences. Such repetitive sequences are fully expected to produce multiple bands due to multiple sites at which primers can initiate the polymerase elongation reaction. Applicants go on to argue such aspects as primer composition, enzyme amount, and longer incubation times to accomplish the invention. These are standard optimization choices during enzyme reactions are acknowledged as such by applicants where they state that "PCR cycles performed must be optimized".

The DECLARATION filed 4/23/91 by Marcus Grompe, M.D., is acknowledged. This declaration concludes the multiplex amplification works but does not suggest or document that it is unexpected given Kogan et al. and is thus non-persuasive to overcome the 103 rejection based on Kogan et al.

No claim is allowed.

Papers related to this application may be submitted to Group 180 by facsimile transmission. Papers should be faxed to Group 180 via the PTO Fax Center located in Crystal Mall 1. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989).

The CM1 Fax Center number is (703) 308-4227.

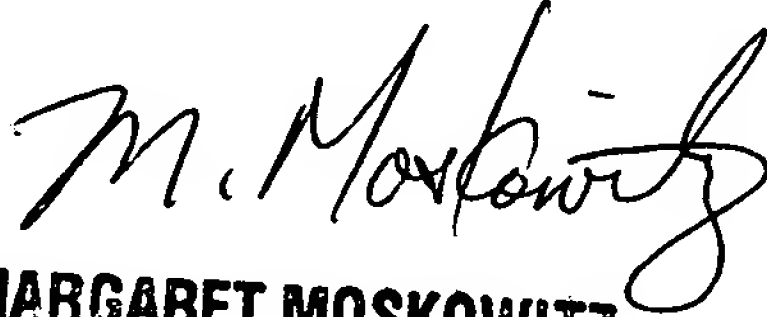
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ardin Marschel, Ph.D., whose telephone number is (703) 308-3894.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0196.

AM

A. MARSCHEL:am

March 9, 1992

  
**MARGARET MOSKOWITZ**  
**SUPERVISORY**  
**PATENT EXAMINER**  
**GROUP 180**